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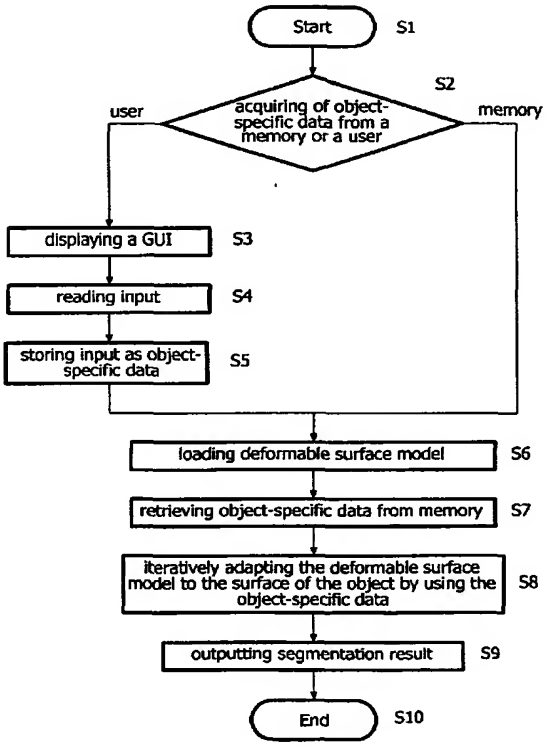
[Continued on next page]

(54) Title: OBJECT-SPECIFIC SEGMENTATION



(57) Abstract: The invention relates to the field of efficient segmentation of collections of anatomical structures in medical imaging. For example, in radiotherapy planning, the segmentation of a collection of several anatomical structures, which represent the target volume in risk organs is required. When using model based segmentation, organ models represented by flexible surfaces are adapted to the boundaries of the object of interest. According to an aspect of the present invention, object-specific a priori information is incorporated in the segmentation process, which allows to provide for an improved segmentation. Furthermore, the segmentation process according to the present invention, may have an improved robustness, also the time required for the segmentation maybe reduced.

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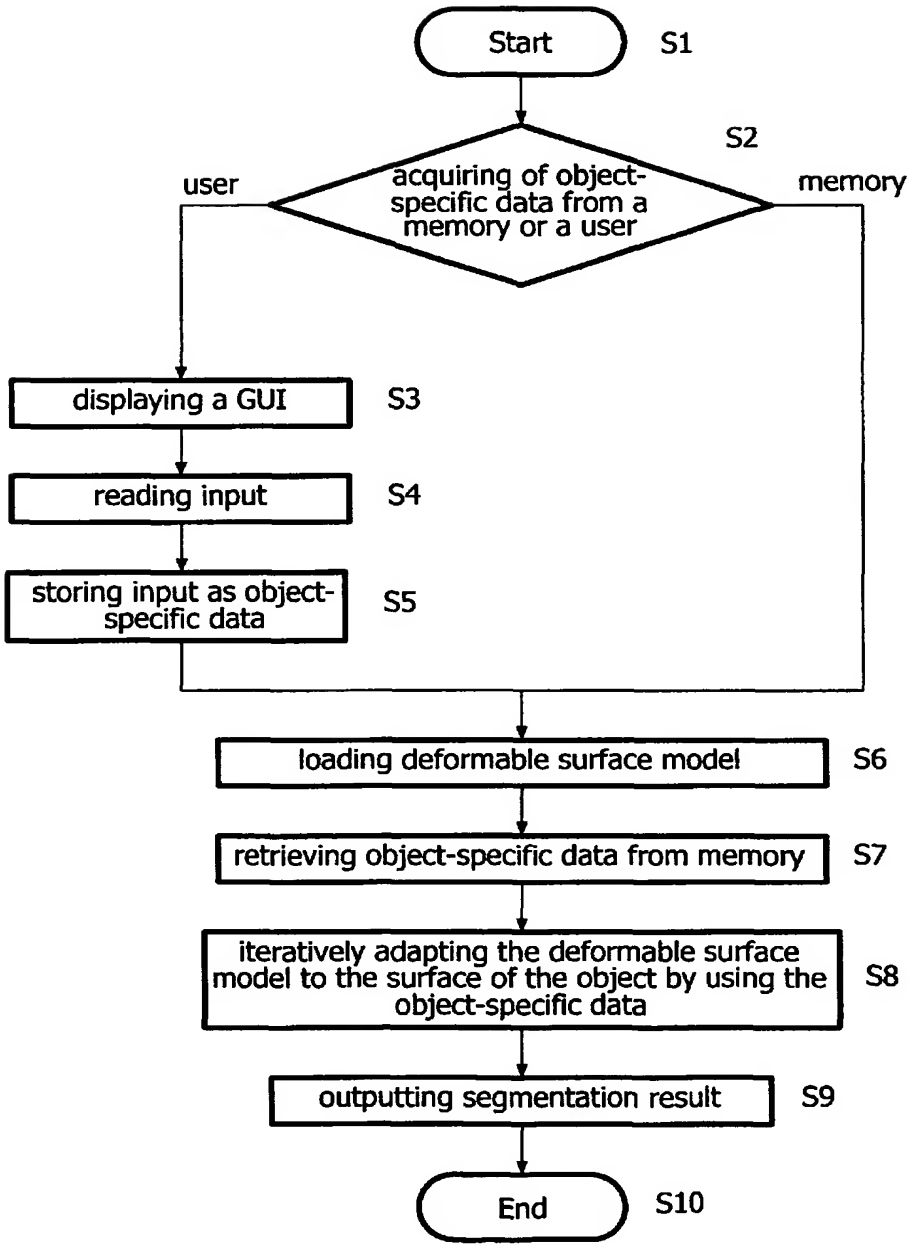
Start
S1
S2
user
acquiring of object-specific data from a memory or a user
memory
displaying a GUI
S3
reading input
S4
storing input as object-specific data
S5
loading deformable surface model
S6
retrieving object-specific data from memory
S7
iteratively adapting the deformable surface model to the surface of the object by using the object-specific data
S8
outputting segmentation result
S9
End
S10

FIG. 2

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/051208

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06T5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06T

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WEESE J ET AL: "SHAPE CONSTRAINED DEFORMABLE MODELS FOR 3D MEDICAL IMAGE SEGMENTATION" LECTURE NOTES IN COMPUTER SCIENCE, SPRINGER VERLAG, NEW YORK, NY, US, vol. 2082, 18 June 2001 (2001-06-18), pages 380-387, XP009027152 ISSN: 0302-9743 cited in the application the whole document -/--	1-4,6-10

[X] Further documents are listed in the continuation of box C.

[ ] Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TSAGAAN B ET AL: "Segmentation of kidney by using a deformable model" PROCEEDINGS 2001 INTERNATIONAL CONFERENCE ON IMAGE PROCESSING. ICIP 2001. THESSALONIKI, GREECE, OCT. 7 - 10, 2001, INTERNATIONAL CONFERENCE ON IMAGE PROCESSING, NEW YORK, NY : IEEE, US, vol. VOL. 1 OF 3. CONF. 8, 7 October 2001 (2001-10-07), pages 1059-1062, XP010563536 ISBN: 0-7803-6725-1 the whole document	1-4,6-10
X	COOTES T F ET AL: "USE OF ACTIVE SHAPE MODELS FOR LOCATING STRUCTURES IN MEDICAL IMAGES" IMAGE AND VISION COMPUTING, GUILDFORD, GB, vol. 12, no. 6, July 1994 (1994-07), pages 355-365, XP009020099 ISSN: 0262-8856 cited in the application page 356 - page 360	1,2,9,10
A	KOBASHI M ET AL: "Knowledge-based organ identification from ct images" PATTERN RECOGNITION, ELSEVIER, KIDLINGTON, GB, vol. 28, no. 4, 1 April 1995 (1995-04-01), pages 475-491, XP004013165 ISSN: 0031-3203 page 478 - page 479	1-5
A	MCINERNEY T ET AL: "Deformable Models in Medical Analysis: A Survey" MEDICAL IMAGE ANALYSIS, OXFORDUNIVERSITY PRESS, OXFORD, GB, vol. 1, no. 2, June 1996 (1996-06), pages 91-108, XP002230283 ISSN: 1361-8423 cited in the application the whole document	1-5,8